

REMARKS

Claim 9 is amended. Claim 13 is canceled. New claims 55-59 are added. Claims 9-10, 12, 14, 23-28 and 51-59 are pending in the present application.

Claims 9 and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kropp et al. (5,362,421). Claims 13-14 and 51-52 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kropp et al. Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kropp et al. in view of Tuttle (5,558,679). Claims 9, 12-14 and 51 and 52 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chen et al. (4,975,221) in view of Tsukagoshi et al. (5,843,251), Kropp et al. and Inoue et al. (5,728,473). Claims 23-27 and 53-54 stand rejected under 35 U.S.C. §103(a) as being obvious over Chen et al. Claims 10 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chen et al. in view of Tsukagoshi et al., Kropp et al. and Inoue et al. and further in view of Tuttle.

Claim 9 is amended to include the limitation from claim 13 and recites an glycidoxymethoxy silane is present in a curable adhesive composition at less than or equal to about 2% by weight. Such claim limitation is rejected as being obvious over the single reference of Kropp, and alternatively, by the combination of Chen in view of Tsukagoshi, Kropp, or Inoue (para. 5, pg. 3 and para. 7, pgs. 4-5 of paper no. 15).

Regarding the obviousness rejection based on Kropp, the Examiner points to **no teachings of the art** for such limitation and simply states that it would be

obvious to one skilled in the art at the time the invention was made to utilize the desired weight percentages of the epoxy terminated silane and the adhesive composition in the method of Kropp and "only the expected would be achieved" (pg. 3 of paper no. 15). Respectfully, Applicant is unable to respond to such alleged motivational rationale for modifying the Kropp invention, that is, only the expected would be achieved, because the statement is nonsensical without teachings to define what is the "only the expected would be achieved". Without such a definition, Applicant is denied an opportunity during prosecution to properly respond to the obviousness rejection because Applicant cannot rebut a statement that is not defined. Accordingly, the motivational is woefully deficient, and therefore, the obviousness rejection based on Kropp fails and should be withdrawn.

Moreover, the Examiner is reminded that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP §2143.01 (8th edition) *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so". 916 F.2d at 682, 16 USPQ2d at 1432; MPEP §2143.01; See also *In re Finch*, 972 F.2d, 1260, 23 USPQ2d, 1780 (Fed. Cir. 1992). The Examiner's alleged motivational rationale is simply stating a conclusion (only the expected would be achieved) and is devoid to any desirability for the modification as required of a proper obviousness rejection.

The reasoning presented by the Examiner is simply stating that the Kropp invention can be modified to allegedly disclose the limitations of claim 9, and therefore, the claim is obvious over Kropp. However, pursuant to the above authority, such reasoning is exactly the rationale the Federal Circuit Court has stated is inappropriate. Consequently, the obviousness rejection against claim 9 is improper and should be withdrawn.

Moreover, the Examiner is effectually stating that the proposed modification to the Kropp invention is well within the ordinary skill of the art, and therefore, obvious. Such analysis for obviousness is contrary to the Federal Circuit law and MPEP authority. The level of skill in the art cannot be relied upon to provide the suggestion to modify a prior art reference. MPEP §2143.01, (8th ed.) *citing Al-Site Corp. v VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999). Without an objective reason to modify the Kropp invention, well within the ordinary skill in the art is does not establish a *prima facie* case of obviousness. MPEP §2143.01, (8th ed.) *citing Ex Parte Levengood* 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Since the Examiner has failed to provide an objective reason to modify the Kropp invention, the obviousness rejection based on Kropp fails and must be withdrawn.

If the Examiner maintains the obviousness rejection based on Kropp against claim 9, Applicant respectfully requests identification of additional prior art or specific teachings within the existing art in a non-final office action which discloses the alleged teachings suggested by the Examiner, or the submission of an affidavit to support the Examiner's rejection, pursuant to MPEP §2144.03

and 37 C.F.R. §1.104(d)(2). "Assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference" and "allegations concerning specific 'knowledge' of the prior art, which might be particular to a particular art should also be supported." *In re Ahlert*, 424 F.2d 1088, 165 USPQ 418, 420-421 (CCPA 1970) (emphasis added). 37 C.F.R. §1.104(d)(2) states "when a rejection in an application is based on facts within the personal knowledge of an employee of the office, the rejection must be supported by an affidavit when called for by the applicant." The rejection can only be based upon the personal knowledge of the Examiner as no teachings are presented to the recited limitation of claim 9. Without supporting prior art, affidavit or other evidence that Applicant can rebut, Applicant is denied an opportunity during prosecution to properly respond to the obviousness rejection due to the lack of prior art. According to 37 CFR §1.104(d)(2), Applicant should have the opportunity to contradict or explain such prior art. The lack of prior art to support the Examiner's rejection clearly indicates Applicant's claims are not obvious based on Kropp. Identification of additional prior art or specific teachings within the existing art, or an affidavit, is requested and appropriate.

Regarding the obviousness rejection against claim 9 (as amended to include the limitation of claim 13) based on the combination of Chen, Tsukagoshi, Kropp or Inoue, such claim recites an glycidoxymethoxy silane is present in a curable adhesive composition at less than or equal to about 2% by weight. Chen teaches conductive adhesives having adhesion promoters that include epoxy functional silanes (col. 4, Ins. 1-23). However, as correctly stated

by the Examiner, Chen is silent to the type of silane utilized as the adhesion promoter (pg. 5 of paper no. 15). To correct the deficiencies in teachings of Chen, the Examiner relies on Tsukagoshi, Kropp or Inoue collectively to state glycidoxy methoxy silane are well known and conventional adhesion promoter agents, and therefore, it is obvious to use a glycidoxy methoxy silane for the adhesion promoter of Chen (pg. 5 of paper no. 15). However, the Examiner has simply provided a collection of references that allegedly teach limitations of claim 9 without providing any motivational rationale for modifying the Chen invention with the teachings of either Tsukagoshi, Kropp and Inoue, contrary to the previously discussed Federal Circuit law and MPEP authority. (please note: Tsukagoshi teaches an insulative adhesive film and states that the adhesive film contains no electroconductive particles and is composed of insulative substances alone (col. 12, lines 1-6)).

That is, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP §2143.01 (8th edition) *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The Examiner's alleged motivational rationale is devoid to any desirability for the modification as required of a proper obviousness rejection. The reasoning presented by the Examiner is simply stating that the Chen invention can be modified to allegedly disclose the limitations of claim 9, and therefore, the claim is obvious. Consequently, the Examiner has not provided any desirability for modifying the Chen invention to include a adhesion promoter comprising glycidoxy methoxy silane allegedly taught

by Tsukagoshi, Kropp or Inoue. Consequently, since the obviousness rejection lacks a proper motivation rationale to modify the Chen invention, the rejection fails and should be withdrawn.

Moreover, the U.S. PTO Board of Patent Appeals and Interferences held that an Examiner cannot establish obviousness by locating references which describe various aspects of an Applicant's invention without also providing evidence of the motivational force which would impel one skilled in the art to do what the patent applicant has done. MPEP §2143.01 (8th ed.) *citing Ex Parte Levengood* 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993). The Examiner has failed to provide evidence of the motivational force which would **impel** one skilled in the art to do what the Applicant has done and has simply located references which allegedly describe various aspects of Applicant's invention contrary to the above authority. The Federal Circuit reversed an obviousness rejection involving technologically simple concept because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention. *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000). Pursuant to this authority, since the Examiner has not provided the required motivation to make the claimed invention, the obviousness rejection against claim 9 based on Chen and Tsukagoshi, Kropp or Inoue is improper and should be withdrawn.

For all the above reasons, the obviousness rejections against claim 9 are inappropriate and should be withdrawn. Claim 9 is allowable.

Claims 10, 12, 14, 51-52 and 55-56 depend from independent claim 9, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

For example, claim 51 recites interposing [curable adhesive] provides the curable adhesive composition interposed between the interfaces [of first and second conductive nodes]. The Examiner rejects such as being obvious over the single reference of Kropp, and alternatively, by the combination of Chen in view of Tsukagoshi, Kropp, or Inoue (para. 5, pg. 3 and para. 7, pgs. 4-5 of paper no. 15).

Regarding the rejection based on Kropp, the Examiner states it is well known and conventional to electrically interconnect two electronic components, and therefore, it is obvious to do so wherein the adhesive contacts the nodes in the method of Kropp (para. 5, pg. 3 of paper no. 15) (emphasis added). However, in no fair or reasonable interpretation does "adhesive contact[ing] the nodes" teach or suggest adhesive composition interposed between the interfaces of first and second conductive nodes as recited in claim 51. Accordingly, Kropp, singularly or in any combination, fails to teach or suggest a positively recited limitation of claim 51, and therefore, claim 51 is allowable.

Regarding the rejection against claim 51 based on the combination of Chen in view of Tsukagoshi, Kropp, or Inoue, the Examiner states to electrically

interconnect two components, it is obvious that the adhesive must be interposed between the components. However, in no fair or reasonable interpretation does adhesive interposed between the components teach or suggest adhesive composition interposed between the interfaces of first and second conductive nodes as recited in claim 51. Accordingly, the combination of Chen, Tsukagoshi, Kropp, and Inoue fail to teach or suggest a positively recited limitation of claim 51, and therefore, claim 51 is allowable.

Moreover, regarding both rejections against claim 51, the Examiner fails to provide any motivational rationale for the combination or modification. Consequently, the Examiner is effectively stating that the references can be combined or modified, and therefore, such is obvious to do so contrary to the above authority. Since the Examiner has not provided any desirability for modifying or combining the references as is required for a proper obviousness rejection, the rejections fail and should be withdrawn. For all the above reasons, claim 51 is allowable.

Claim 23 recites curing an epoxy into an electrically conductive bond electrically interconnecting first and second components, the epoxy having an effective metal surface wetting concentration of silane to form a cured electrical interconnection having a contact resistance through said metal surface of less than or equal to about 0.3 ohm-cm². The Examiner correctly states that Chen is silent to an epoxy having an effective metal surface wetting concentration of silane to form a cured electrical interconnection having a contact resistance

through a metal surface of less than or equal to about 0.3 ohm-cm² (pg. 7 of paper no. 15). The Examiner then improperly relies extensively on the teachings from Applicant's specification to state Applicant teaches an effective concentration of silane in the epoxy terminated silane of less than 2% by weight to obtain a desired contact resistance through the metal surface (pg. 7 of paper no. 15). The Examiner then reasons that since Chen teaches providing an epoxy functional silane of less than 1% by weight (actually teaches 0-2%, col. 4, ln. 20), one skilled in the art would readily appreciate that Chen's teachings being within the effective concentration range **taught by the Applicant**, it would be expected that the adhesive of Chen to have the contact resistance of less than or equal to about 0.3 ohm-cm² as recited in claim 23. This reasoning for the obviousness rejection fails on several fronts.

First, the Examiner breaks a long held and basic tenet of Patent law stated generally as the Examiner can not rely on the Applicant's disclosure for teachings to provide a rejection, and such is sometimes referred to as impermissible hindsight reconstruction. The Federal Circuit stated it most succinctly, "[t]o imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against the teacher." *W. L. Gore & Associates, Inc. v Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 312-13 (Fed. Cir. 1983). The Examiner presents no reference or references of record for teachings to suggest a contact resistance through a

metal surface of less than or equal to about 0.3 ohm-cm² as recited in claim 23, except for relying on teachings of Applicant's disclosure. Pursuant to the Federal Circuit authority above, such reliance is the insidious hindsight syndrome, and therefore, the Examiner's rationale for the obviousness rejection against claim 23 must fail and should be withdrawn.

The M.P.E.P. defines the problem clearly at §2142 (8th ed):

To reach a proper determination under 35 U.S.C. §103, the Examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made. In view of all the factual information, the Examiner must then make a determination whether the claimed invention 'as a whole' would have been obvious at that time to that person. **Knowledge of Applicant's disclosure must be put aside in reaching this determination**, yet kept in mind in order to determine the 'differences', conduct a search and evaluate the 'subject matter as a whole' of the invention. The tendency to resort to 'hindsight' based upon the Applicant's disclosure is often difficult to avoid do to the very nature of the examination process. However, **impermissible hindsight must be avoided** and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

M.P.E.P. §2143 (8th Ed.) (emphasis added). No reasonable or fair argument can made that the Examiner has not relied on the knowledge of Applicant's disclosure. Consequently, the Examiner has impermissibly used hindsight to reconstruct Applicant's invention recited in claim 23, and therefore, the obviousness rejection is inappropriate and must be withdrawn.

Differences exist between exemplary disclosed embodiments of Applicant's disclosure and the teachings of Chen. For example, Applicant's disclosure

provides in one exemplary embodiment that silver resin is utilized while Chen relies upon conductive fillers. There is no correlation between the dissimilar teachings in the art and Applicant's exemplary embodiment, and accordingly, any reliance of a particular percentage of adhesive promoters of Chen as allegedly disclosing the claimed contact resistance of less than or equal to about 0.3 ohm-cm² is fundamentally flawed.

Moreover, the Examiner relies on Chen's teaching of providing an adhesion promoter having 0-2 parts by weight (pg. 7 of paper no. 15) to allegedly teach limitations of claim 23. Claim 23 does not recite an adhesion promoter having any parts by weight, and therefore, such teachings of Chen are not relevant to teachings of the limitations of claim 23. For this reason the rejection is improper and should be withdrawn.

Additionally, the Examiner presents no teachings of the art of record to an epoxy having an effective metal surface wetting concentration of silane to form a cured electrical interconnection having a contact resistance through said metal surface of less than or equal to about 0.3 ohm-cm² as recited in claim 23. The combination of art fails to teach an effective metal surface **wetting concentration** of silane. The Examiner does not point to any teachings to wetting concentration, and an electronic search of the references verifies the cited art does not present any teachings to wetting concentration. The Examiner does not point to any teachings to contact resistance through said metal surface of less than or equal to about 0.3 ohm-cm², and an electronic search of the

references verifies the cited art does not present any teachings to contact resistance. Since the Examiner has failed to provide art, singularly or in any combination, that teaches positively recited limitations of claim 23, the obviousness must fail and should be withdrawn.


For all the above reasons, claim 23 is allowable.

Claims 24-28, 53-54 and 57-59 depend from independent claim 23, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



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Inventor Rickie C. Lake
Assignee Micron Technology, Inc.
Group Art Unit 1733
Examiner J. Haran
Attorney's Docket No. MI40-274
Title: Method of Conductively Interconnecting Electronic Components, Battery Powerable
Apparatus, Radio Frequency Communication Device, and Electric Circuit

**VERSION WITH MARKINGS TO SHOW CHANGES MADE Accompanying
RESPONSE TO OCTOBER 9, 2002 OFFICE ACTION**

In the Claims

The claims have been amended as follows. Underlines indicate insertions
and ~~strikeouts~~ indicate deletions.

9. (Amended) A method of conductively interconnecting electronic components comprising:

providing a curable adhesive composition comprising an epoxy terminated silane comprising a glycidoxy methoxy silane;

providing first and second electronic components to be conductively connected with one another;

interposing the curable adhesive composition between the first and second electronic components; ~~and~~

curing the adhesive into an electrically conductive bond electrically interconnecting the first and second components; and

wherein the glycidoxy methoxy silane is present in the curable adhesive composition at less than or equal to about 2% by weight.

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